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3 April 1980

Worldwide Report

NUCLEAR DEVELOPMENT AND PROLIFERATION

No. 37

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LEONOV: 'PROVEN VIABILITY' OF NONPROLIFERATION TREATY

LD111139 Moscow IZVESTIYA in Russian 7 Mar 80 Morning Edition p 5 LD

[Article by Leonov under the rubric: "The Nuclear Weapons Nonproliferation Treaty is 10 Years Old": "A Reliable Barrier"]

[Text] It is 10 years since the Nuclear Nonproliferation Treaty came into force. This important document formed the basis of the international nuclear weapons nonproliferation system created by the efforts of the Soviet Union and other peace-loving states. Evidence of its wide recognition is the fact that approximately 110 world countries have now signed the nonproliferation treaty.

In putting forward the proposal that such a treaty be drawn up, the Soviet Union was trying to erect a reliable barrier in the way of those states which make no secret of their intention to acquire nuclear weapons. It is obvious that the threat of nuclear war would increase immeasurably if such weapons were acquired by states which do not now possess them. The treaty's importance lies in the fact that all its signatories not already possessing them have undertaken not to acquire nuclear weapons or any nuclear explosive devices and have agreed to monitoring by the International Atomic Energy Agency (IAEA). Thus states' renunciation of the spread of nuclear weapons has now become a norm of international law.

At the present time an ever-increasing number of countries in the world are actively joining the process of using nuclear energy for peaceful purposes. This is helped considerably by the Nuclear Nonproliferation Treaty, which envisages that all its signatories will promote the fullest exchange of equipment, materials and scientific and technical information for the purpose of further developing nuclear energy for peaceful purposes.

An important part in the practical implementation of international cooperation in the sphere of peaceful use of nuclear energy is played by the IAEA. In more than two decades of work the IAEA has developed into an authoritative organization which has accumulated considerable experience in helping developing countries to make peaceful use of nuclear energy and in developing international cooperation in the transfer of nuclear technology, especially for the purpose of meeting developing countries' energy needs. The importance of this area of its work is particularly increasing at the present time, when the role of nuclear energy in the world's overall energy balance is becoming increasingly tangible.

It is evident from a large body of data that nuclear energy will develop rapidly in many countries of the world, in developed and developing countries alike, and this in turn will result in a considerable increase in their nuclear potential and lead to the accumulation of nuclear explosive devices. For this reason genuinely successful and fruitful cooperation in this sphere can be insured only when the international community is guaranteed against cooperation becoming a channel for the spread of nuclear weapons.

In this context the IAEA's international guarantees, which now cover all the nuclear activities of those countries which signed the treaty and do not possess nuclear weapons, as well as most nuclear installations in these countries which have not signed the treaty, are assuming special significance. By fulfilling the function of monitoring the use of nuclear energy entrusted to it under the nonproliferation treaty, the IAEA is at the same time making its own considerable contribution to strengthening the nuclear weapons nonproliferation regime.

The IAEA annual report, presented at the 34th UN General Assembly, states that the agency secretariat had not found "any discrepancy indicating the transfer of a significant amount of the nuclear material supplied under guarantee for the production of any nuclear weapons or for the purpose of achieving any military aim." This is evidence that the treaty has proven its viability, stood the test in practice and fully justified the hopes pinned on it.

At the same time it must not be forgotten that a number of states with considerable nuclear potential and which make no secret of their nuclear ambitions balk at signing the treaty. Chief among these "near-nuclear" states are the Republic of South Africa and Israel. Developments in Pakistan, where certain circles have long made no secret of their intention to acquire nuclear weapons, are becoming dangerous. There has been an increasing number of press reports that, under a veil of secrecy in Pakistan, preparations are proceeding at full speed to test a nuclear bomb. In this connection, the world public is particularly concerned that the U.S. administration, which itself only recently spoke of the dangerous trends in the development of Pakistan's nuclear program, has resumed considerable military and economic aid to that country. All this is bound to put us on the alert. The United States, itself a depository of the treaty, is actively supporting countries longing to possess a nuclear bomb.

If states situated in regions of tension get hold of such weapons, this could result in the creation of an explosive situation not just in that particular geographical region but also in the world as a whole. For this reason it remains a most important task to insure that the treaty is truly universal and to expand the sphere of application of the IAEA international guarantees and the number of countries belonging to it.

The nonproliferation system's durability must be given a further boost by the conference of states which have signed the Nuclear Nonproliferation Treaty, to be held next August to examine its working. The Soviet Union attaches great importance to the coming conference and to making careful and coordinated preparations for it, and is willing to cooperate with other states for this purpose. The conference will discuss a wide range of questions connected with developing nuclear energy in the world for the purpose of social and economic development, while at the same time insuring that the task of nuclear weapons nonproliferation is fulfilled.

The Soviet Union has consistently advocated the adoption of effective measures to prevent the spread of nuclear weapons across our world and is willing to continue strictly fulfilling the commitments it accepted under the Nuclear Nonproliferation Treaty. In his address at the 34th UN General Assembly session A.A. Gromyko, member of the CPSU Central Committee Politburo and USSR foreign minister, said: "In our view it is essential that further efforts be made to strengthen the nuclear weapons nonproliferation system. And this is the responsibility of all states." This principled line, which is dictated by a genuine concern to strengthen peace and international security, is given practical embodiment in the Soviet Union's well-known proposals aimed at halting the nuclear arms race.

CSO: 5100

FRANCE SEEKS TO SELL TECHNOLOGY TO AUSTRALIA

Canberra THE WEEKEND AUSTRALIAN in English 9-10 Feb 80 p 16

[Report from Karl Wilson in Paris]

[Text]

France is about to launch a massive sales drive in Australia to win an estimated $3.5 billion order for our first uranium enrichment plant.

The sale of the technology to Australia is vital to France's future energy program in which two thirds of the nation's electricity grid will be nuclear by 1985.

With virtually no deposits of fossil fuels – oil, coal and gas – and hydro-electric power production at saturation point, France is dependant on importing its energy needs.

This year its fuel import bill is expected to cost US$25 billion.

France imports 77 per cent of its fuel, and all its oil is imported.

This has left the French economy vulnerable to decisions taken abroad and has become a heavy burden on its finances.

Before the 1973 oil crisis France began to look at nuclear-fuel energy as its saving alternative power source.

With only 55,000 tonnes of known uranium reserves in France and with the possibility of a further 45,000 tonnes, France still needs to import uranium.

A sophisticated nuclear technology has mushroomed in France over the past ten years.

The governtment has developed the industrial as well as defensive capabilities for all stages of the nuclear fuel cycle.

RELIABLE

But with only a very small amount of uranium locally, France needs to have a reliable and continuous supplier.

France does import uranium from West Africa's Niger and Chad.

But the bulk of her imports comes from Namibia in contravention of a United Nations decree which prohibits the importing of anything from South African-controlled territory.

Politically the uranium is causing problems for the French Government.

A truckload of yellowcake destined for France recently found its way into Libya.

Such incidents do not help France's nuclear standing in the world.

The announcement recently by the Minister for Trade and Resources Mr Anthony that Australia is considering setting up an enrichment plant has provided France with an ideal opportunity to secure a reliable supplier of uranium.

Australia has 20 per cent of the world's known uranium reserves.

In January Mr Anthony announced the setting up of the Uranium Enrichment Group of Australia, a commercial consortium which consists of BHP, CSR, Peko-Wallsend and Western Mining, to examine all aspects of uranium enrichment.

The benefits of enriching our uranium are enormous.

Uranium ore costs around $60,000 a metric tonne but enriched it costs around $120,000 a metric.

France certainly has the technology for enrichment.

Its enrichment plant at Tricastin in the Rhone Valley of Southern France began production last year using the gaseous diffusion method and its technology is more advanced than the American.

But the French admit output is 20 per cent lower than main rival, Urenco.

This consortium, consisting of Holland, West Germany and the UK, uses the centrifuge enrichment system.

ABUNDANT

But the French Atomic Energy Commission maintain that Australia's abundant supplies of cheap coal providing power for the enrichment plant will feed their system.

They claim their method is more feasible than Urenco's with its overall dearer operating cost, maintenance and premier investment needed for the centrifuge system.

Mr Jean-Pierre Devilliers, director of the French Atomic Energy Commission will head the delegation which leaves for Australia next Saturday.

They will spend 16 days in Australia meeting with the new Australian consortium and both Federal and State Governments.

Queensland, Western Australia and South Australia are all very eager to have the enrichment plant.

In 1970-71, France was asked by the then Liberal-Country Party Government to examine the possibility of setting up an enrichment plant in Australia.

With the advent of the Labor Government in 1972 the plan was dropped.

Now the French are eager to pick up where they left off, hopefully with a sale.

Although a non-signatory of the treaty on the non-proliferation of nuclear weapons, France has publicly come out and committed itself to behave exactly as the States who have signed.

France maintains that as one of the promoters of the international guidelines for the export of nuclear material, equipment and technology and London Guidelines, along with its own safeguards, it 'has no need to sign the non-proliferation treaty.'

Although France claims non-proliferation of nuclear weapons, it would take a tonne of Gallic charm to convince the anti-nuclear lobby in Australia otherwise.

But the French have that independent incentive that scents victory.

– KARL WILSON in PARIS

CSO: 5100

BRITISH SEAMEN SAID BLOCKING NAMIBIAN URANIUM SHIPMENTS

Johannesburg THE CITIZEN in English 13 Mar 80 p 2

[Text] London--British imports of South West African uranium were threatened yesterday as the National Union of Seamen urged members into action to halt shipments.

The call came amid a new political row over imports from SWA's Rossing Mine, which is operated by the London-based Rio Tinto Zinc Corporation.

The row erupted after Britain's independent ITV network screened a programme earlier this week showing SWA uranium being shipped to Britain by air and sea.

The NUS said the uranium imports were "a violation of the United Nations decree which seeks to protect Namibia's resources against exploitation while South Africa's occupation continues."

Britain's Conservative Government maintains that there is nothing illegal about the trade in SWA uranium as it does not recognise the UN Council for Namibia which made the decree.

The government's view is that the UN General Assembly, which in 1967 set up the Council for Namibia, is not empowered by the UN Charter to impose binding obligations on member states.

Britain is one of the five Western countries working closely with the UN to secure an internationally-acceptable settlement in SWA.

A British-based group, the Campaign against the Namibian Uranium Contracts, yesterday published a 68-page booklet entitled "The Rossing File" outlining "the inside story of Britain's secret contract for Namibian uranium."

Author Alun Roberts told a Press conference the booklet made it clear that Britain was acting in defiance of international law in importing uranium from SWA.

He urged that pressure should be brought to bear on the government to cancel the Rossing contract.

Mr Alex Lyon, a left-wing MP in Britain's opposition Labour Party, said: "Now that Zimbabwe has achieved its freedom, we want the focus to be turned on Namibia."

Mr Lyon told reporters Mr Robert Mugabe's victory in the Rhodesian election had come as no surprise to him. He forecast that Swapo would win an internationally supervised poll in SWA.

Swapo, he claimed, had the support of the Ovambo tribe who constituted some 60 percent of the SWA population and the movement also enjoyed the backing of other tribal groupings in the territory.--Sapa.

CSO: 5100

QUESTIONS CONTINUE AFTER TWO FRENCH NUCLEAR MISHAPS

Perth THE WEST AUSTRALIAN in English 30 Jan 80 p 53

[Report from David Roble in Auckland]

[Text] TWO accidents on France's South Pacific nuclear testing range at Mururoa atoll have brought a series of claims and accusations that have simmered for months after the events.

What happened last July is a question that, in the absence of any official report, has been bothering Tahitians and many French people for some time.

The accidents, which left a toll of two Frenchmen dead and 10 injured, have drawn growing criticism from other Pacific nations, notably New Zealand.

The New Zealand delegate to the United Nations, Mr Tim Francis, has demanded full details from France about the accidents while the Foreign Minister, Mr Brian Talboys, on a recent visit to Paris, called for open information about the testing.

A leading scientist, Dr Chris Burgess, of Wellington's Victoria University and a world authority on coral atolls and reefs, dismissed French assurances that the accidents were non-nuclear. He said on a national television programme that it was almost certain that radiation had leaked into the sea from one of the accidents.

An American expert in international law, Dr Jerome Elkind of Auckland University, said New Zealand had good grounds to reopen its case against France in the International Court of Justice at The Hague. The case foundered when the French abandoned atmospheric testing in favour of underground blasts in 1974.

Now a French Polynesian investigating select committee has expressed dissatisfaction with several aspects of the accidents.

It called for the setting up of a local branch of France's independent Central Agency for Protection against Atomic Radiation and demanded the establishment of a special anti-radiation clinic in Tahiti with full safety procedures.

On July 6, an accident in an underground laboratory bunker killed a man. Another was fatally injured and three others were burned.

On July 25, a tidal wave swept across part of the atoll three hours after a nuclear device was triggered while only part of the way down the testing shaft. Seven men travelling on a vehicle on the atoll's ring road were injured. The wave was apparently linked to a subsidence from the undersea slopes of the atoll.

A verbal report by the French scientific mission insisted that the accidents were non-nuclear, no radiation was involved and the people of French Polynesia had no reason to be alarmed.

But Tahitian and French anti-nuclear movements claim the report was a whitewash and that important details confirming radiation leaks were kept hidden.

Several Tahitian workers on the atoll insisted privately (they are sworn to secrecy and afraid to make accusations openly) while I was making inquiries in Tahiti that radiation was involved, and they appear supported by some of the evidence.

The mission's report has posed a fresh batch of unanswered questions.

How can the accused be their own judge? Two of the mission members were senior officials of the Atomic Energy Commission, the agency responsible for the tests and which vigorously defended itself when details of the accidents first leaked out.

And why were the badly burnt victims of the July 6 accident flown halfway around the world in secret to France rather than taken direct to Jean Prince Hospital in Papeete, which reputedly has the most advanced clinic for burn cases in the Pacific (especially set up by the Mururoa programme)?

One theory is that the CEA authorities did not want embarrassing publicity over such a serious accident with less than two weeks to go before a state visit by French President Valery Giscard d'Estaing. Or was there a problem of serious contamination?

My information from workers at Mururoa was that part of the atoll where the explosion occurred was zoned radioactive until September 3—two months after the accident. And some Paris newspapers reported the two dead men as being in lead-lined coffins.

However, the Assembly select committee seems partly appeased by the experts' explanations.

The French High Commissioner, Mr Paul Cousseran, is unruffled by criticism and insists nuclear testing at Mururoa is harmless and indispensable for France's security.

It is on the question of Polynesia's economy that the nuclear crunch comes. France underwrites the territory's gross national product to the tune of almost 70 per cent (about $50 million in 1976).

It has done so ever since an economic boom began with the filming of "Mutiny on the Bounty", the opening of Faaa airport and preparation for the tests back in 1963.

The bubble burst in 1974 with the end of atmospheric tests and a scaling down of manpower and spending by the Pacific Experimentation Centre (CEP).

Mr Francis Sanford, the unofficial Polynesian "premier" of the territory and long a bitter opponent of nuclear tests and French policies, is now in a touchy position.

As Government Council vice-president he is trying to run the archipelago's internal affairs with an economy deeply dependent on France and knowing full well that in the unlikely event of a French pullout the Polynesian administration would founder.

KUWAIT DENIES PLANS TO ACQUIRE FRENCH NUCLEAR REACTOR

LD081358 Kuwait KUNA in English 1131 GMT 8 Mar 80 LD

[Text] Kuwait, March 8 (KUNA)--Kuwait denied Saturday reports of attempts to acquire nuclear reactors from France. Foreign Ministry under secretary Rashid ar-Rashid told AL-ANBA' newspaper that Kuwait never thought of getting a nuclear reactor from any quarter for many reasons and that this issue had not been discussed during the recent visit to Kuwait by the French President Valery Giscard d'Estaing.

But Ar-Rashid admitted that the transfer of French technology to Kuwait was raised during the French-Kuwaiti talks and that the issue would be subject for further discussion by specialists from both countries.

Ar-Rashid added that Kuwait had thought, years ago, of obtaining a nuclear station for power generation but the government dropped the idea because of the risks involved [words indistinct] operation.

The Foreign Ministry under secretary was commenting on a report by the Paris-based AL-MUSTAQBAL Arabic magazine which said that a Kuwaiti team had arrived in the French capital to complement technical consultations on an agreement reached between the French president and the amir of Kuwait. According to the agreement, the magazine said, France will build a nuclear reactor in Kuwait to be used for water desalination and power generation. The under secretary described the magazine report as baseless.

CSO: 5100

BRIEFS

ZHIVKOV TOURS LIBYAN PLANT--Mr Zhivkov visited the nuclear research centre near Tripoli, which is constructed at present by Bulgarian and Soviet specialists. The 850 Bulgarian specialists engaged at the project are constructing the main building and do part of the assembly work. Three hundred Soviet specialists also work there. [Excerpt] [AU131022 Sofia BTA in English 0822 GMT 13 Mar 80 AU]

CSO: 5100

PRC, HONG KONG COMPANIES CONSIDER NUCLEAR PLANT

OW130936 Hong Kong AFP in English 0715 GMT 13 Mar 80 OW

[Text] Hong Kong, March 13 (AFP)--The local China Light and Power Company is discussing with the Chinese authorities the feasibility of jointly building a nuclear power plant in Guangdong Province adjoining Hong Kong, it was confirmed today.

Confirmation was obtained after a report from Beijing attributing the information to the governor of the U.S. State of Pennsylvania, Mr. Richard Thornburgh, following a meeting he had with electric power officials in the Chinese capital. According to the report, Mr. Thornburgh was told that the Guangdong nuclear plant would be built near the ocean and that China Light and the Guangdong Electric Company were now seeking a suitable site.

A China Light spokesman confirmed that sites were being sought but added that everything was still at a very early stage. According to the report from Beijing, the subject of the Guangdong plant arose in Chinese discussions with Mr. Thornburgh about the breakdown of the nuclear plant at Three-Mile Island, which is in the governor's state.

CSO: 5100

WEST AUSTRALIANS QUERY PLANS FOR NUCLEAR POWER PLANT

Opposition Party's Stand

Perth THE WEST AUSTRALIAN in English 28 Jan 80 p 3

[Text] The State ALP is not satisfied with the State Energy Commission's decision to review plans for siting a nuclear power station north of Perth.

The commissioner of the SEC, Mr Bruce Kirkwood, said late last week that siting plans would be reviewed in the light of a U.S. inquiry which recommended that nuclear plants should be at least 16km from population centres.

The SEC will use as the basis of the review the report into the accident at the Three Mile Island plant at Harrisburg Pennsylvania.

The Leader of the Opposition, Mr Davies, said yesterday that the one lesson from the Harrisburg accident was that no nuclear power station was completely safe.

All plans for a nuclear power station in WA should be abandoned.

"No one should be deluded into thinking that because the inquiry recommended a 16km population-free zone there is no risk beyond 16km," he said.

"When the Harrisburg disaster was at its height there were plans to evacuate everyone in a 40km radius because of the potentially disastrous effects within this radius.

"Other effects would have been felt farther than 40km away.

"There is no need for WA to take the nuclear power risk. We do not need it, we cannot afford it and we cannot risk it.

"Talking about moving the site will have little effect on the possible end result."

Mr Kirkwood said on Friday that the Breton Bay site, 90km north of Perth, was the most favoured site for a nuclear power station.

The site is about 8km south of the Ledge Point fishing community which has a population of 1500.

'Not safe'

The Campaign Against Nuclear Energy said yesterday that the recommended 16km radius should not be regarded as a safe limit.

Mr R. Rutherford, a spokesman for the group, said that the range of contamination could extend for hundreds of kilometres, depending on topography plant design and weather conditions.

He said that in the past 15 years WA had experienced earth tremors of an intensity similar to one that caused a leak of radioactivity at a laboratory in Livermore, California, on Friday.

The stability of the Breton Bay site should be carefully monitored and studied.

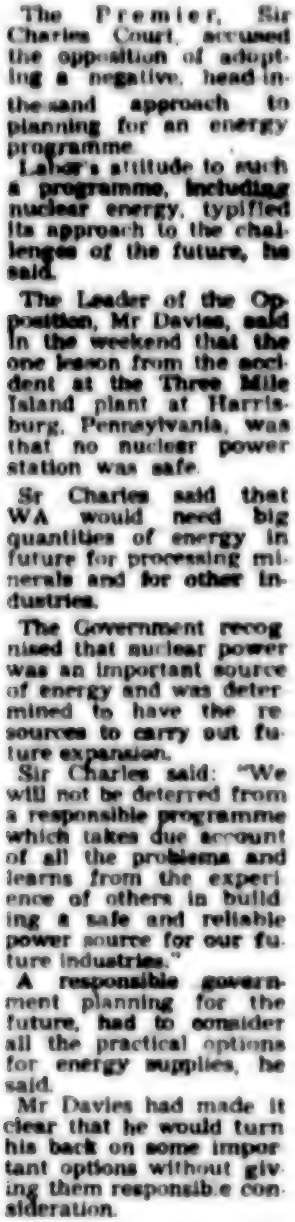
The Australian Democrats' spokesman on the environment, Mr R. Downie, called yesterday for a referendum on nuclear power generation in WA.

He said that till the problems associated with the decommission of spent nuclear stations, waste disposal and safety factors had been resolved, none should be established in Australia.

Premier Backs Plant

Perth THE WEST AUSTRALIAN in English 29 Jan 80 p 11

[Text] The State Government will press on with plans for a nuclear power station in WA by the mid-1980s, ignoring a call by the Opposition for the proposal to be scrapped.



The Premier, Sir Charles Court, accused the opposition of adopting a negative, head-in-the-sand approach to planning for an energy programme.

Labor's attitude to such a programme, including nuclear energy, typified its approach to the challenges of the future, he said.

The Leader of the Opposition, Mr Davies, said in the weekend that the one lesson from the accident at the Three Mile Island plant at Harrisburg, Pennsylvania, was that no nuclear power station was safe.

Sr Charles said that WA would need big quantities of energy in future for processing minerals and for other industries.

The Government recognised that nuclear power was an important source of energy and was determined to have the resources to carry out future expansion.

Sir Charles said: "We will not be deterred from a responsible programme which takes due account of all the problems and learns from the experience of others in building a safe and reliable power source for our future industries."

A responsible government planning for the future, had to consider all the practical options for energy supplies, he said.

Mr Davies had made it clear that he would turn his back on some important options without giving them responsible consideration.

CSO: 5100

GOVERNMENT READY TO SELL ITS SHARE IN URANIUM MINE

Canberra THE AUSTRALIAN in English 8 Feb 80 p 7

[Text] THE Australian Government will go ahead with the plan to sell its 41.6 per cent stake in the country's only existing uranium miner, Mary Kathleen Uranium Ltd.

This follows the successful sale of the Government stake in the Ranger uranium project in the Northern Territory to Peko Wallsend Ltd – which was arranged late last year.

The Government's former 50 per cent stake in Ranger is now to be incorporated into a new public company – Energy Resources of Australia – which will be sponsored by the two existing partners in the project, Peko and EZ Industries.

Confirmation that the Canberra would go ahead with the MKU sale came in announcements from the company and the Government yesterday.

MKU is currently owned 51 per cent by Conzinc Riotinto of Australia Ltd, 41.6 per cent by the Australian Atomic Energy Commission, 2.7 per cent by Kathleen Investments Ltd and the balance by public shareholders.

MKU's representatives will meet the Government soon to discuss the matter. The meeting is at the Government's request.

The sale of the MKU stake comes at a time when the group has just regained substantial profitability – in excess of $17 million last year.

The sale was first mooted by Mr Anthony, Minister for Trade and Resources last September. In December, he added:

"In a statement to Parliament on 13th September, 1979, I indicated that the Department of Trade and Resources had been asked to investigate the possibility of divesting of the Government's shareholding in Mary Kathleen Uranium Ltd. Mary Kathleen Uranium Ltd is one of the organisations which has submitted a proposal to acquire the Government's interest in the Ranger uranium project.

"In order to avoid any possible misunderstanding, no action will be taken in respect of the Government's shareholding in Mary Kathleen Uranium Ltd until the question of the Government's interest in the Ranger uranium project has been resolved."

In its announcement yesterday, MKU said:

"Subsequently, on 18 December, 1979, the Government announced it had decided that it would divest of its interests in the Ranger uranium project and that it wished to accept the proposal submitted by Peko-Wallsend Ltd.

CSO: 5100

AUSTRALIA

SOUTH AUSTRALIA MOVES TO DEVELOP URANIUM DEPOSITS

Canberra THE AUSTRALIAN in English 1 Feb 80, Supp., p 2

[Text] **BEFORE the shock defeat of the incumbent Labor Government in the State election last qear, South Australia had lagged well behind in the Australian uranium stakes.**

Although uranium mineralisation had been well known in the State for years, it had been overshadowed in recent times by the huge discoveries of uranium in the Northern Territory and Western Australia, and to a lesser extent Queensland.

The anti-uranium policy of the South Australian Labor Government had also not helped the search for uranium in the State, nor had it encouraged mining companies to proceed with the development of existing prospects.

But the defeat of the Labor Government in the 1979 State Election changed all that with the new Liberal Premier of the State, Mr Tonkin and Mines and Energy Minister, Mr Goldsworthy moving rapidly to change the State's uranium policy.

The policy changes have now put South Australia at the forefront of Australian uranium development with two major uranium prospects on the verge of development and the State Government bidding for a uranium enrichment plant to be constructed in the State.

And it is clear that with industrial development in South Australia having badly stagnated over recent years, the new South Australian Government is strongly committed to uranium development as a basis for the future health of the State's economy.

The key to development based on uranium are two major deposits of the mineral.

THE Beverley uranium prospect near Lake Frome in the north of the State which is owned by the Oilmin NL, Petromin NL and Transoil NL group of companies based in Brisbane.

AND the huge Olympic Dam prospect on the Roxby Downs station in South Australia, which is being explored and developed jointly by Western Mining Corporation (the discoverer) and the big oil group, BP Australia.

No reserves for the three minerals discovered at Olympic Dam have yet been announced by WMC and BP, but the deposit is known to contain huge amounts of Uranium, gold and copper and has the potential to be one of the largest mines of its type in the world.

However, much further drilling has to be completed before WMC and BP can announce even preliminary reserves for the Olympic Dam prospect and drilling is continuing in the area.

Because of the huge potential for the prospect and the change in policy towards uranium by the South Australian Government, WMC and BP have speeded up their exploration and development work on the site and some figures for reserves are anticipated to be available sometime in the current year.

Both companies and the South Australian Government would also like to see the Roxby Downs prospect developed by the mid 1980s to take advantage of the expected peak world demand for uranium around that time.

Development of the mine with its three major minerals would provide a new and strong economic base for the South Australian economy in the late 1980s and 1990s and provide incentive for the development of new industries in the State.

However, of the two major uranium prospects in South Australia it is the Beverley prospect owned by the Oilmin group that seems most likely to get off the ground first

Discovered many years ago, the Beverley prospect has left undeveloped because of the previous South Australian Government's attitude to uranium mining, the discoveries of uranium deposits elsewhere in Australia and the relatively slow demand for uranium world-wide.

The Beverley deposit contains an estimated 35 million lbs of uranium oxide awaiting development and could relatively easily be brought into production.

The oxide is contained in some 6.5 million tonnes of ore and the ore grade is about 5.3 lbs a tonne of oxide which is steady throughout the deposit

As well as the Oilmin group companies, the U S based Phelps Dodge group also has a stake 50 per cent in the Beverley prospect and would play a major role in the mine's development.

The third string to the South Australian Government's uranium development policy is the attempt by the government to gain Federal Government approval to build Australia's first uranium enrichment plant, probably on an area on the Spencer Gulf.

However, in this attempt the government has competition from both Queensland and Western Australia to build the plant.

All three States have strong claims to site the proposed plant but the South Australian Government may have a politically more telling argument before the Federal Government because in the 1980s uranium could provide a substantial base for the future development of its economy.

Western Australia and Queensland, on the other hand, already have a far stronger and broader economic base on which to build.

Whatever the outcome of the battle over the uranium enrichment plant, however, it is clear that uranium development will play a major role in the State's economy in the 1980s and 1990s.

CSO: 5100

AUSTRALIA

EXPERT URGES AUSTRALIAN TECHNOLOGY FOR ENRICHMENT PLANT

Sydney THE SYDNEY MORNING HERALD in English 31 Jan 80 p 17

[Article by Sir Philip Baxter, former chairman of the Australian Atomic Energy Commission: "To Enrich or Not To Enrich?"]

[Text] The Australian media has been full of reports of possible uranium enrichment plants which might be built in this country.

Queensland has been talking to France's Cogema, South Australia and Western Australia have discussions with the British-Dutch-German URENCO and there have been talks with Japan.

Very little information has become public, though large investments measured in some thousands of millions of dollars, and presumably foreign, have been mentioned.

Little prominence has been given to the fact that Australia has a satsifactory enrichment technology of its own, as indicated in successive reports of the Atomic Energy Commission. Members of the public can hardly be blamed if they are confused.

The anti-nukes have predictably gone overboard in spreading stories of undisposable radioactive waste, radiation dangers and even nuclear disasters.

An enrichment plant produces no radioactive waste, involves no abnormal radiation hazards and no risks of nuclear disaster.

It is a straight forward industrial process, proven over many years, to alter the proportions of the two types of uranium atoms, called 238 and 235, which are found in all natural uranium, to a ratio more suited to the needs of present nuclear power stations.

Two products are produced, enriched uranium and depleted uranium.

The former is fuel for present day power stations, the latter will be fuel for the fast neutron reactors (often called breeders) which the world will be using in the 1990s and beyond. Energy is consumed.

There are several reasons why Australia might wish to enrich some of its uranium. The immediate one is that it will enhance the value of our exports by a substantial amount.

Nuclear powered

Also in the new century most of the larger ocean-going vessels will be nuclear powered and will probably need enriched uranium fuel. This will include the RAN where the advantages of nuclear power are very great.

The future demand for enrichment depends upon a variety of factors, many of which are far from clear.

First is the future rate of growth of the nuclear power industry, which depends upon many things.

Second is the type of nuclear stations constructed, whether they will be as at present, requiring enriched uranium, or if they will be fast neutron reactors, requiring natural uranium. That the latter will ultimately replace the former is certain, but the time scale is very unclear.

When the fast neutron reactors come into common use they will operate on stocks of depleted uranium for many years.

Another factor is how long will the present reactors operate before they must be replaced.

Utilities amortise these stations over 20 or 25 years but there are no obvious reasons why their lives should not be much longer.

The International Fuel Cycle Evaluation, INFCE, set up some time ago by the major nuclear nations to study the future of nuclear power, has published preliminary results which highlight these issues. INFCE expects that no new enrichment capacity will be required in the non-communist world before 1990.

Expansions in capacity, currently planned, including those in Japan, will cover needs until the second half of the 1990s.

Expressing enrichment capacity in separative work units, SWU, a mathematical description of the capacity of a separation plant to perform enrichment, INFCE considers demands through 2000 to 2025, for two cases, low growth and high growth.

For low growth a demand for 40 million SWU for 1990 and 53 million for high growth. In 2000 the figures are 88 million and 128 million. In 2025, low growth assumes considerable impact from fast neutron reactors, high growth assumes none.

Uncertainty

The figures are 44 million, for low growth and 427 million for high growth. Installed capacity in 1990 is likely to be around 50 million.

Obviously the rate of adoption of the breeder is critical.

Although these figures are little more than intelligent guesses, they do illustrate the extreme uncertainty of this field for major capital investment. In the low-growth situation demand is likely to fall from 2025 onwards though it will not vanish.

There are five enrichment processes which have been proved.

Two, the German nozzle process and the South African fixed wall centrifuge Australia need not consider.

The gas diffusion process developed and built in the United States for military purposes, now supplies the bulk of the world's needs.

France has built a large diffusion plant and Russia almost certainly has one. Diffusion has the disadvantage that it is not economically viable except in large units. An initial investment of from $2,000 million to $3,000 million is required.

The gas centrifuge process was tried during the war but the technology was inadequate.

Around 1960 new technology was available and at least seven countries, including Australia, each acting on its own, made it work.

Today a British, Dutch, German consortium has set up URENCO which is in the international business of selling enrichment.

Britain has a small diffusion plant but has elected to use centrifuges in future.

Japan has developed a similar process and has a pilot plant operating, to be followed by substantial capacity.

Australia could with its own knowledge build a large pilot plant if the Government approved.

The fifth process is one using highly tuned laser beams. It has been studied in a number of countries, including Australia, and though much of this work is still secret, reports from various areas seem encouraging.

It is against this tangled background that four Australian companies are jointly examining what, if anything, Australia should do about enrichment.

Own work

I hope Australia will build a pilot centrifuge plant, based essentially on its own work, but using any other information which might be obtained in talks with URENCO or Japan. This is provided that no restrictive conditions are accepted as to how we could develop or use the plant.

All the equipment, particularly the centrifuges should be made in Australia.

The size of the pilot plant needs consideration in the light of factors too detailed to be discussed here, but a capital expenditure in the range of $50 million to $100 million would be adequate.

The product from this plant could be sold.

Extensions could then be undertaken on the basis of firm long-term contracts covering sufficient years to ensure recovery of the investment and an acceptable profit.

Australia would then have the technology as a first step towars a full fuel cycle development in association with other countries in the region.

QUEENSLAND METALWORKERS BAN STEEL FOR URANIUM MINE

Sydney THE SYDNEY MORNING HERALD in English 11 Feb 80 p 3

[Text]

CANBERRA. — About 100 Brisbane metalworkers have banned work on steel fabrication bound for the Ranger uranium site in the Northern Territory.

The ban was applied because the work breached the union's policy that no work be carried out on steel contracts associated with uranium mining and development.

It is also the first manifestation of the ban imposed by the ACTU at its congress in Melbourne last September on all work connected with uranium mining and development.

The workers are members of the Amalgamated Metal Workers' and Shipwrights' Union, at Sargeants-Ani, the prime contractor, and Evans Deakin Industries Ltd, a sub-contractor.

The work involves 4,000 tonnes of steel fabrication for the Ranger site, which is being developed by Peko Wallsend and EZ Industries, and a new company floated by both, Energy Resources of Australia.

The Government recently sold its share in the development.

The State president of the union Mr Brian Burns said some workers had already been laid off at Evans Deakin because of the ban, which is understood to have been applied despite the prospect of an extra 20 to 30 jobs being created by the contract.

He said it was AMWSU policy that no work should be done on steel contracts associated with uranium mining.

"These workers — there could be as many as 100 — are just carrying out that policy," he said.

The bans were likely to remain at least until the union's national conference, in June.

"We hope the policy will be confirmed and strengthened then," he said.

The ACTU ban was the result of a significant victory for leftist trade unions at the organisation's congress in September. It was a major defeat for the ACTU President, Mr Hawke.

But despite the vote, the ban was never expected to affect the uranium mining industry, significantly, because of the lack of support for it at union grass roots level.

Industry sources were unaware last night of the bans or the effect they might have on the Ranger development.

One spokesman did say that, as far as he was concerned, the project was going "very well, very smoothly." The sources described the bans as an attempt by the union to make trouble.

CSO: 5100

BRIEFS

WORKERS UNION SUPPORT--Surfers Paradise.--The Australian Workers' Union yesterday solidly reaffirmed its support for uranium mining and export. The union's 94th annual convention here rejected motions from members in South Australia seeking support for the Australian Labor Party's stand on uranium. The AWU national secretary, Mr Frank Mitchell, said only two out of 27 delegates voted for a uranium ban. "Reaffirmation of our policy means we will continue to mine and treat uranium for export and if necessary man nuclear reactors in this country," he said. "The policy was introducted in 1975 and it has stood the test of time." [Excerpts] [Brisbane THE COURIER-MAIL in English 23 Jan 80 p 9]

ACTU BOOKLET--The ACTU has prepared a booklet urging unionists to withdraw their labor from all stages of the uranium industry in Australia. The booklet calls on unions vigorously to enforce a policy of non-co-operation with uranium mining and export. The ACTU has also decided to send a delegation to Northern Territory mines in May to try to convince workers that they should leave the industry. The ACTU is printing 10,000 copies of the booklet for immediate distribution this week. The ACTU plans to follow distribution of the booklet--which gives the case against uranium under headings like "Aboriginals: Uranium Mining an Assault on Their Land and Heritage" and "The Environment--Cannot Be Restored"--with separate papers on specific issues associated with uranium. These are expected to include uranium ming and the economy, uranium and civil liberties, genetic factors, and the threat to Australia's sovereignty. [Excerpts] [Melbourne THE AGE in English 4 Feb 80 p 1]

CSO: 5100

PRIME MINISTER CLARIFIES NUCLEAR POLICY

Won't Hesitate To Explode Devices

BK130815 Delhi Domestic Service in English 0730 GMT 13 Mar 80 BK

[Text] Prime Minister Mrs Gandhi has reaffirmed India's commitment to the peaceful use of atomic energy. At the same time, she has made it clear that it will not hesitate to carry out nuclear explosions or implosions whatever they might be in the national interests.

Replying to questions in the Rajya Sabha today, Mrs Gandhi said it is necessary that India should keep in touch with the latest development of technology in the nuclear field. The prime minister agreed with a member that India should make an in-depth study of the question of development of nuclear energy in the neighboring countries. She said we should keep our eyes and ears open and we must be in touch with the latest development of technology in the field.

'AFP' Report

BK131057 Hong Kong AFP in English 0822 GMT 13 Mar 80 BK

[Excerpts] New Delhi, 13 March (AFP)--Prime Minister Mrs. Indira Gandhi said today that while India remained committed to peaceful use of nuclear energy she would not hesitate to carry out nuclear explosions or implosions "in the national interest."

Mrs. Gandhi, who was replying to a question in parliament on possible nuclear threat to India from Pakistan, said India should make an in-depth study of nuclear development in the neighbourhood.

Mrs. Gandhi said Pakistan and China had made it known that their intentions in producing nuclear energy were peaceful. "We hope this is, indeed, do," she said.

Meanwhile the Department of Atomic Energy (DAE) today announced a plan to set up a second power reactor fuel reprocessing plant at Kalpakkam, near Madras.

The new plant would reprocess spent fuel from the two reactors of the Madras atomic power projects.

CSO: 5100

INDIA

BRIEFS

BOMBAY NOT DEPENDENT ON U.S. FUEL--The Tarapore nuclear power station will not be shut down even if the United States does not honor its commitment to supply nuclear fuel. This was stated by chairman of the Atomic Energy Commission Dr H.N. Sethna while delivering the Maharaja Taiyabji Rao memorial lecture in Baroda today. He said that our efforts in the past toward self-reliance have given us confidence to rise to such challenges. Dr Sethna, however, hoped that the United States will honor its commitment. [Text] [BK121552 Delhi Domestic Service in English 1530 GMT 12 Mar 80 BK]

ADDITIONAL HEAVY-WATER PLANTS--Three more heavy-water plants are to be set up in the country in the near future by the Atomic Energy Commission. The chairman of the commission, Dr H.N. Sethna, said in Baroda that these plants need not necessarily be coupled with fertilizer projects but may be based on the hydrogen-sulfide water-exchange process. [Text] [BK140340 Delhi Domestic Service in English 0240 GMT 14 Mar 80 BK]

HAQ: PAKISTAN NUCLEAR DEVELOPMENT--New Delhi, 13 Mar (AFP)--Foreign Minister Narasimha Rao today told parliament that Pakistan President Ziaul Haq had informed India that his country had no intention to manufacture nuclear weapons. Mr Rao said this answering a parliamentary question on reports that Pakistan was manufacturing an atom bomb. The foreign minister said that the government had, following the reports, corresponded with Pakistan conveying its concern in the matter. "It is hoped that the Government of Pakistan would abide by this assurance," Mr Rao added. Answering another question, Mr Rao said India had told Pakistan that induction of arms in the region would be detrimental to the process of normalisation and improvement of relations between the two countries. The minister was asked about press reports of the U.S. and China proposing to extend arms assistance to Pakistan. [Text] [BK131555 Hong Kong AFP in English 1254 GMT 13 Mar 80 BK]

CSO: 5100

WORKERS EXPOSED TO HIGH RADIOACTIVE LEVELS

OW081601 Tokyo KYODO in English 1047 GMT 8 Mar 80 OW

[Text] Tokyo March 8 KYODO--Twenty-six workers at an Osaka non-destructive test factory using [as received] in Osaka have been exposed to radioactivity because of their company's sloppy administration, one of them to a level far above the tolerance standard, it was disclosed here Saturday. Officials of the Science and Technology Agency searched the Sakurajima factory of Hitachi Shipbuilding and Engineering Co. the same day on suspiciion of violating the radiation damage prevention law.

According to the agency's investigation, 24 workers entered the radiation chamber for five days between May 15-25 last year without knowing the cobalt-60 radiation source remained uncovered. All the men were then exposed to radiation from 10 millirems to 1,250 millirems, with one monitoring 12,000 millirems in his abdomen.

The dose was four times larger than a combined 3,000 millirems allowed for exposure in three months under the radiation damage prevention law, the agency officials noted. The number of sperms of the victim temporarily decreased, but is now regaining the loss, they said.

CSO: 5100

BRIEFS

CRITICISM OF NUCLEAR SITE--Karachi March 12 (AFP)--Dr I.H. Usmani, senior energy advisor to the United Nations, has criticised the location of Pakistan's nuclear complex near Chashma Barrage. Giving a talk at the Karachi Press Club, Dr Usmani, a former chairman of Pakistan's Atomic Energy Commission, said the Chashma site for a nuclear complex was not suitable since it was in the seismic zone. The energy expert pointed out that besides the possibility of the earthquake, [words indistinct] happened the leakage of radioactive elements from plutonium would contaminate river Indus waters for 24,000 years. He called for a national debate on the location of this site. He regretted that the late Prime Minister Sulfiqar Ali Bhutto had made a political issue out of Pakistan's atomic energy plans, making the world suspicious about it. He stressed the need for a national programme for better exploitation of all available energy resources in the country. [Text] [BK121527 Hong Kong AFP in English 0754 GMT 12 Mar 80 BK]

NUCLEAR TECHNOLOGY GOAL--President Gen Mohammad Ziaul Haq has reiterated that the government will continue the program of acquiring nuclear technology, and said that we would not rest until this objective was achieved. He was inaugurating the 23rd Convention of the Institute of Engineers in Lahore this morning. He said that the acquisition of nuclear technology was the fundamental right of Pakistan, and without it the economic development of Pakistan was not possible. The president said that conventional energy resources were not sufficient to meet national requirements. Oil produced from domestic sources met scarcely 13 percent of the country's needs. He said that Pakistan had to depend upon other nations to meet its oil requirements, and that it would have to spend 12 billion rupees in foreign exchange for this purpose during the current year. Gen Mohammad Ziaul Haq said that therefore, the acquisition of nuclear technology was the ultimate aim, so that we can implement our development programs. [Excerpt] [BK100845 Karachi Overseas Service in Urdu 0800 GMT 10 Mar 80 BK]

CSO: 5100

CEMA COOPERATION IN ATOMIC ENERGY DEVELOPMENT

LD111642 Moscow TASS International Service in Russian 0855 GMT 11 Mar 80 LD

[Text] Moscow, 11 March, TASS--TASS observer Ilya Maslennikov writes:

The socialist countries who are members of CEMA are resolutely implementing long-term programs for cooperation in key industries. Czechoslovak engineers have scored an outstanding success in the implementation of the cooperation program in the spheres of energy, fuels, raw materials and engineering. At the Skoda combine named after V.I. Lenin they have manufactured the first Czechoslovak nuclear reactor which has a capacity of 440,000 kw, and have handed it over to Hungary, where it will be assembled at the atomic powerstation.

Another six nuclear reactors of the same capacity are presently under construction at the works. They are destined for atomic powerstations in several CEMA countries. At the same time, design work is underway on the production of a 1 million kw atomic reactor.

Czechoslovak engineers are mastering the problems involved in manufacturing complex equipment for atomic powerstations within the framework of specialization and cooperation, and with the help of the Soviet Union. The Skoda combine and the Soviet Atommash in southern Russia are becoming the main enterprises producing the basic technological equipment for atomic powerstations, such as reactors, turbines and steam generators. Other CEMA member-states also participate in the manufacutre of equipment and means of protection for atomic power stations within the framework of specialization and cooperation in production.

The long-term program for cooperation among CEMA states in the spheres of energy, fuels, and raw materials envisages the accelerated development of atomic energy in the European socialist countries and in Cuba. During the next 10 years it is planned to build atomic power stations in CEMA countries that will have a combined capacity of about 37 million kw. The implementation of this program will make it possible to increase the consumption of electricity in the European CEMA countries approximately 1.5 times. Thanks to the construction of two atomic powerstations in the USSR with a capacity of 8 million kw, opportunities for the export of Soviet electricity to European CEMA countries will greatly increase. It is also planned to build intersystem [mezhsistemnyye] powerlines that will carry 750 kilovolts.

The implementation of these grandiose plans is furthered by the long-term program of cooperation in the sphere of engineering, which is designed to ensure a high rate of development in the manufacture of modern types of equipment, machines and apparatus. In this respect priority is being accorded to measures to increase the output and reciprocal supply of equipment for atomic powerstations. The aim of these coordinated and agreed measures is to insure the continuous growth of the fuel and power potential of all countries of the socialist community.

CSO: 5100

BRIEFS

BRAZIL, CHILE NUCLEAR NEGOTIATIONS--Relations between Brazil and Chile concerning nuclear and petroleum cooperation could be intensified during the visit President Figueiredo will make to Chile during the second half of this year. This was reported yesterday to Chilean newspapers by the Chilean ambassador to Brasilia, Fernando Zegers. In Brasilia, Foreign Minister Saraiva Guerreiro confirmed Zegers' remarks, stating that "there is no restraint on Brazil in negotiating nuclear cooperation with Chile. The Chilean ambassador has already stated that his country is interested in achieving cooperation with Brazil in that sector and also regarding petroleum. The two foreign ministries are discussing these two subjects." [Excerpt] [PY071204 Sao Paulo O ESTADO DE SAO PAULO in Portuguese 6 Mar 80 p 6 PY]

CSO: 5100

ARGENTINA

GOVERNMENT REJECTS FOREIGN MEDDLING IN NUCLEAR PROGRAM

PY110024 Buenos Aires NOTICIAS ARGENTINAS in Spanish 2319 GMT 10 Mar 80 PY

[Text] Buenos Aires, 10 Mar (NA)--Argentina today rejected every form of foreign interference aimed at restricting its nuclear development and stated that "since the production of nuclear weapons is entirely dependent upon each country's decision, it cannot be prevented through restrictions imposed on the transfer of technology."

This position was adopted at a meeting held at the Foreign Ministry today, during which the national decision "to use nuclear energy exclusively for peaceful purposes" was reaffirme

The meeting was attended by Foreign Minister Carlos Pastor, Vice Adm Carlos Castro Madero, chairman of the National Nuclear Energy Commission, and Roberto Guyer and Esteban Takacs, Argentine ambassadors to the FRG and Canada, respectively, countries with which Argentina has signed nuclear development agreements.

CSO: 5100

NUCLEAR PLANT CONSTRUCTION DELAY PROVES COSTLY

PY101659 Sao Paulo O ESTADO DE SAO PAULO in Portuguese 6 Mar 80 p 33 PY

[Excerpts] Licinio Seabra, president of FURNAS electric company, revealed yesterday that a new project for the foundations of nuclear plant Angra 2 has been approved. The new project consists of the reinforcement of 202 piles which are already in place and the sinking of 88 new ones. The need for this new foundation project has caused a 2-year delay which has added $326 million to the cost of Angra 2 and which will delay the start of construction on Angra 3. When the first nuclear plant goes into operation by March 1981, there will be a 10- to 15-percent rise in electricity rates.

Seabra said that the preparation of the new project alone will cost $1 million, and that FURNAS wants the Kraftwerk Union [KWU] and the NUCLEBRAS [Brazilian Nuclear Corporations] subsidiary NUCLEN [NUCLEBRAS Engineering, Inc.] to help pay this extra cost, since the FRG company had to contract new consultants because the former consultant--Zerna Institute--was not properly equipped to meet the requirements demanded by the National Nuclear Energy Commission [CNEN].

The new project, which was prepared by the KWU, and which was checked by technicians of and consultants to the CNEN, FURNAS, KWU and NUCLEN, provides for the reinforcement of the top part of 202 piles which are already in place, maintaining their 1.10-meter diameter to a depth of 5 meters and 1.30-meter diameter to a depth of 12 meters, and for the sinking of 88 new piles to an average depth of 15 meters, with diameters of 1.30 meters and 1.80 meters.

The cost of the reinforcement is estimated at $5 million at current exchange rates. This figure, as the president of FURNAS said, represents 1 percent of the civil engineering cost of the entire plant or 0.25 percent of the cost of the plant, which is estimated at $2 billion, excluding financial costs which already stand at the $1.25 billion mark. As a result of this, the next nuclear plant, Angra 3, although no site has yet been chosen for it, already has an additional financial cost of $80 million.

Since the piles must be reinforced, the construction of the slab which is to go on top of the piles will begin only in April 1981, thus postponing the plant's commerical operation until the second half of 1987. Since the construction of Angra 3 must follow 1 and 1/2 years behind the construction of Angra 2 to facilitate work at the construction site, Angra 3 will be able to go into operation only in 1989, provided no other delay occurs.

CSO: 5100

FRENCH TO HELP WITH NEW URANIUM PLANT

Mexico City EL SOL DE MEXICO in Spanish 15 Feb 80 pp 1-F, 6-F

[Report from EL HERALDO DE CHIHUAHUA]

[Text] Chihuahua, Chih., (OEM)—In accordance with the agreement signed by Mexico and France for a joint investment project designed to develop plans for nuclear energy in this country, during the current year construction will begin on the uranium-processing plant in the Villa Aldama area, where there are 150,000 tons of potential uranium reserves.

The Nuclear Energy Institute made this public in this city and added that the project, proposed since 1974, will have an initial grinding capacity of 1,000 tons of ore a day, but it is estimated that this major program will develop at a much greater rate.

The institute stated that technical studies are already being made in the Villa Aldama area for the purpose of precisely determining what kind of plant will be needed to proceed with immediate construction at a later date.

The initial figure that has been set for this joint Mexican-French investment is $30 million, although this has not yet been confirmed. However, bore-sample soil-analysis projects are still being developed at the El Nogal and Margaritas plants which are located in the Pena Blanca Range.

Furthermore, according to the Nuclear Energy Institute report, the geological studies have been extended to the Moctezuma plant area as well as to the Hidalgo del Parral region, where radioactive material has been located, using a plane equipped with radiation monitoring devices.

Since 1974, when the big project for the development of nuclear energy at this site was proposed, the necessary arrangements between the appropriate authorities, both in Mexico and France, have been made; the only thing lacking is for both nations to ratify the program in order to proceed to the immediate construction of the uranium-processing plant.

As we were informed, this will benefit Mexico because it will permit us to exploit our resources right here, so that we will not have to go on shipping them abroad as we have been doing for lack of sufficient technological means to set up a processing plant.

11,466
CSO: 3010

'COMMERCIAL QUANTITIES' OF URANIUM DISCOVERED

LD201251 Abu Dhabi AL-ITTIHAD in Arabic 18 Mar 80 p 4 LD

[Report by Taha Al-Nu'man]

[Excerpts] Uranium and other radioactive materials have been discovered in commercial quantities in Somalia. The Arab Mining Company, in agreement with Somalia and Iraq, will exploit the uranium for the benefit of the Arabs.

Announcing this in an exclusive statement to AL-ITTIHAD, Somali Mineral and Water Development Minister Hussein Abd al-Qadir Qasim said that geological surveys and prospecting operations in the areas of (Qalqudu) and Mudugh in central Somalia have proved the existence of uranium and other radioactive materials in large quantities in an area of about 85,000 square kilometers. He added that $100 million will be allocated for the agreement concluded for the exploitation of uranium in the Dusa Mareb concession area. An agreement in principle has been reached on a comprehensive program to be carried out in other areas where preliminary surveys have established the existence of radioactive materials in order to determine the size of the deposits.

He said that technological prospecting operations have actually begun to extract uranium and a processing plant is being built.

He said that the Arab Mining Company, which was established in accordance with the decision made by the Arab League Council in 1973 under the supervision of the Arab Monetary Fund and to which all the Arab states contribute in varying proportions, has been granted a concession to prospect for and extract the uranium over an area of 13 square kilometers. The company has committed itself to carrying out survey and prospecting operations in the remaining areas.

He added that the Iraqi republic has joined the agreement as a third party on the basis of the bilateral understanding reached between Mogadishu and Baghdad in the wake of Iraqi First Deputy Prime Minister Taha Yasin Ramadan's visit to Somalia for the purpose of exploiting Somali uranium in the interest of the Arab nation.

CSO: 5100

AUSTRIA

BRIEFS

PLANT TO REMAIN 'MOTHBALLED'--Vienna--The general meeting of the Tullnerfelo Nuclear Power Plant Corporation (GKT) yesterday [7 March] unanimously decided to continue the "mothballing" of the Zwentendorf nuclear power plant until the end of 1984 "for the purpose of insuring its optimal utilization. According to Director General Fremuth of the Austrian Federal Power Company, this decision also includes the stored uranium fuel rods. [Text] [AU101130 Vienna VOLKSSTIMME in German 8 Mar 80 p 1 AU]

CSO: 5100

FINLAND

EXPERTS CONTINUE TO GRAPPLE WITH NUCLEAR WASTE PROBLEMS

Helsinki UUSI SUOMI in Finnish 13 Feb 80 p 24

[Article by Pirjo Tuusa: "Nuclear Waste Problem Becoming More Acute, 40 Experts Already Involved in Nuclear Waste Study"]

[Text] This year 40 research workers in Finland are participating in nuclear waste research in state institutes and several research workers are doing similar work in nuclear power companies.

In seeking a solution to nuclear problems the majority of attention is directed toward Sweden. The most urgent problems are semi-active wastes from power plants and their storage in the earth or bedrock.

The largest accumulation of nuclear waste, the subject of this research, has so far occurred at Loviisa where a nuclear power plant has been in operation for nearly 3 years already.

The most difficult form of waste, that which will remain active for tens of thousands of years, has been used as fuel. There is a total of 241 fuel elements in the water tanks of the reactor building.

In the spring another 120 of these 3-meter long, 14-centimeter wide fuel elements will be added to the water tanks. At that time the used fuel rods will be exchanged for new ones for the third time in the nuclear power plant.

The First Lot to a Storage Facility

Before this, however, a portion of the spent rods, the oldest lot, will be taken outside of the reactor building for the first time to a storage facility, which was completed a year ago for the purpose of storing spent fuel.

There is now 6,300 liters of semi-active waste in a separate building inside of double layered containers. The waste is half liquid.

Semi-active waste primarily consists of evaporated waste from the radioactive coolant. It is contemplated that the storage facility for this waste will be built after 5-6 years.

"As the power plant becomes older the amount of semi-active waste will probably increase. A total of perhaps 20,000-30,000 liters of semi-active waste per year will accumulate from Loviisa I and II," states Risto Jarnstrom, chief of the chemical laboratory at Imatra Power.

The greatest accumulation of waste is low-level waste. This waste consists of plant waste: radioactive cloth, mineral shavings, pieces of pipe, and used protective clothing.

Low-level waste, whose radioactivity dissipates the fastest, is compressed and packaged in 200-liter plated barrels.

"The annual accumulation of low-level waste is approximately 10 cubic meters. So far the total accumulation amounts to 40 cubic meters," states Bjorn Wahlstrom, radiation safety chief at Loviisa I.

70,000 Liters at Olkiluoto

Approximately 70,000 cubic meters or 70,000 liters of semi-active and low-level nuclear waste have accumulated during the 1-year operation of Finland's second nuclear power plant, Olkiluoto I.

The semi-active waste has been stabilized in a liquid form of bitumen. There are approximately 200 barrels, each containing 200 liters of this waste, in a protected storage facility.

"All of the used fuel is still in the core of the reactor," notes Graduate Engineer Heikki Paumolin of PVO [Industrial Power].

There are two time limits in the treatment of nuclear waste from Olkiluoto: storage facilities for used fuel are sufficient until the year 1990 and until 1985 for semi-active and low-level waste.

The municipality of Eurajoki in approving an additional design for the plant area added a stipulation according to which the administration of the plant has agreed not to make the area of the municipality a final storage place for highly active waste or used fuel.

According to Wahlstrom Imatra Power will not have a need for any new storage facilities in this decade.

A Strict Agreement This Year?

The details for transporting used fuel to the Soviet Union are now being worked out between Imatra Power and Atomenergoexport.

According to the power company a detailed agreement should be reached by the end of this year.

The first shipment, fuel divided between four railroad cars, would be shipped to the Soviet Union next year. After that, shipments would occur annually, a year's supply of fuel at a time.

Research Will Entail 7-8 Million Markkas

Nuclear waste research has become one of the most significant nuclear research projects in Finland and an increasingly larger share of research funds is going to research on the storage of highly active nuclear waste.

Those funding nuclear waste research are the Ministry of Trade and Industry and the power corporations. According to Dr. Heikki Reijonen's calculations 7-8 million markkas will be spent on nuclear waste research this year.

The State Technical Research Center has the most people doing research on nuclear waste -- 30 research workers, of whom the largest portion is working in the reactor, nuclear power, and geotechnical laboratory. Also research workers specializing in concrete and pyro-engineering are involved in this work.

Nuclear waste is also being studied at the Geological Research Center, the Radiochemical Institute of Helsinki University, and the Radiation Safety Institute.

Pressure on Highly-Active

Heikki Reijonen, who is working in the electrical and nuclear engineering research section of VTT [State Technical Research Center], is the coordinator of nuclear waste research at VTT.

"Previously the emphasis of the research was on plant waste, but in the near future more emphasis will be placed on the interim and final storage of highly-active fuel waste," states Reijonen.

The report of the nuclear waste work group commissioned by the Ministry of Trade and Industry, which is to be completed this spring, will provide a direction for such research in the near future.

The largest single expenditure this year, 800,000 markkas, will result from Finland's participation in Sweden's so-called Stripa program dealing with a study of nuclear waste. The study will deal with the depositing of waste in a mine shaft that is no longer being used.

In Finland nuclear waste research has almost entirely been concentrated in communities around the power plant. Geological studies, among other things, are being conducted, in which 500-meter deep holes are being bored into the bedrock for the purpose of studying the possibility of storing waste in bedrock.

According to Reijonen the premise of the waste study is that if necessary, it would be possible to deposit used fuel as such or as retreated waste in Finland.

"Indeed, at this time retreatment plants are accepting only small experimental samples. It is hardly worthwhile to store unretreated fuel in Finland," states Reijonen.

According to Reijonen the problem will, however, become urgent after the year 2000.

"It is difficult to predict what will happen 40 years from now since many other partial factors concerning this problem are yet to be studied. Much patience is needed in this research," states Reijonen.

Stabilization in Titanite?

Researcher Olli Heinonen is participating in a clarification of the nuclear waste problem at the Radiochemical Institute of Helsinki University. The institute is studying, among other things, the permeation of radionuclei in soil and ground water as well as the stabilization of nuclear waste.

"As far as stabilization research is concerned, we are just beginning, but we have progressed somewhat further than just a mere idea," states Heinonen.

The research workers are attempting to find a domestic substance in which the nuclear waste can be stabilized before it is deposited in the bedrock. At this time experiments are being conducted with titanite, which can be obtained from the Kemira Mining Chemical Plant in Pori.

The plant produces titanite as a sludge. At the radiochemical plant it is granulated and radioactive water is then filtered through the granules. The radioactivity "sticks" to the granules.

"The next stage would be to transform the granules into a ceramic form so that they would become very dense under heat and great pressure. We are only just beginning to experiment with this," notes Heinonen.

Research Will Not Be "Completed"

Heinonen emphasizes that nuclear waste research will never be "completed".

"We will never be able to know for certain what will be the fate of nuclear waste after thousands of years and this argument is used by supporters as well as opponents of nuclear power."

From the point of view of Heikki Niininen, chief of the environmental affairs office of Imatra Power, the waste problem does not represent an obstacle to the development of nuclear power.

"It is not justified to say that the nuclear waste problem is not solvable. We are already able to deal with the treatment of nuclear waste. The last step, final storage, has not yet been tested.

"Research will be accomplished in that order in which it is needed and the nuclear waste problem will, indeed, be acute after 10-30 years," states Niininen.

Professor Matts Roos, who opposes an increased use of nuclear power, considers the issue from another point of view.

"No country 'more competent' than Finland has been able to resolve the problem of nuclear waste. Burying in the earth is always a temporary solution since the radioactivity of this waste lasts forever from a human point of view," notes Roos.

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'LE MATIN' WEIGHS OPTIONS FOR NUCLEAR MODERNIZATION

LD121057 Paris LE MATIN in French 7 Mar 80 p 2 LD

[Article by Pascal Krop: "Neutron Bomb: A Strategic Choice"]

[Text] The president's choices next summer on how to modernize France's nuclear forces will only be made in response to technical considerations. Indeed, on the basis of their advanced research, French military experts are now advising Valery Giscard d'Estaing to adopt a light missile on a mobile launch pad rather than a cruise missile. But the head of state's decision on the neutron bomb will be a political choice, since it involves French deterrent policy as a whole.

Has France's military strategy changed? France has scarcely altered its potential targets from the first Mirage IV, which, in the event of nuclear conflict, was to destroy Moscow, to the present programs of missiles on the Albion Plateau aimed at the main Soviet cities. Its deterrent policy is still based on "countercity" strategy which threatens the expected enemy's major cities.

In simple figures the French nuclear force's power has greatly increased in a few years. By 1985 it should reach 90 megatons (against 20 in 1974).

But some major options for 1985-1995 have still to be decided. The president will settle them next summer. The primary issue is the strategic nuclear forces. Which new weapons will in fact succeed the Albion Plateau surface to surface missiles, whose credibility will have diminished markedly by then (this stationary component of the French nuclear range will be increasingly vulnerable to attack)? The same question arises for the Mirage IV, which is to be gradually withdrawn from service between 1985 and 1990 (although from 1985 some 15 will be equipped with a new medium-range missile still on the drawing board). Until that time research is heading in two directions: on the one hand, the cruise missile, which carries one or several nuclear warheads and is like a small unmanned aircraft which can be launched under water, on the water, on the ground or thousands of kilometers up, escaping radar by a system which enables it to merge with the topography; and, on the other hand, a mobile ballistic missile mounted on a ground-based platform.

France is in no position financially to manufacture both these weapons and must therefore choose. In the immediate future, the experts' choice is for a miniaturized mobilse missile (11 meters high weighing 6 tons; the current Albion Plateau missile weighs 30 tons and measures 14 meters) mounted on a dual-tractor truck moving about the country.

In fact, the cruise missile poses numerous problems which French researchers do not yet seem to have overcome. Finally, the defense ministry indicates that research on nuclear submarines is continuing (especially into metals, with a view to increasing underwater performance). On this last point, it appears that the president will decide whether or not to increase research according to how much progress has been made by summer 1981.

The second major choice concerns the neutron bomb. At all events, the government seems determined to achieve a qualitative increase in its tactical nuclear weapons, intended for delivering a final warning to the enemy before going on to strategic weapons. A military official states that "the enhanced radiation bomb has had bad publicity. It is stupidly said that the neutron bomb will kill 1,000 civilians for every soldier. Quite the reverse is true, insofar as neutron radiation penetrates very thick metal but is stopped by earth, for example."

Moreover, the Defense Ministry seems henceforth to be undertaking a campaign to "popularize" this weapon which, to most French people, conjures up appalling suffering.

In more general terms, if the president were to decide in its favor next summer, this would have important political consequences. By equipping France with a more effective tactical weapon, in particular capable of stopping enemy divisions, the government would by the same stroke be admitting the possibility of nuclear conflict in the European theater, thereby ending the present conception of the French deterrent policy.

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GREECE

BRIEFS

URANIUM DEPOSITS DISCOVERED--Reliable sources report that more than 20,000 tons of uranium have been discovered near Serres in northern Greece. Reports suggest that more of the substance may well be found. [Athens NEWS in English 8 Mar 80 p 4 AT]

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